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AREI **UPDATES**

Updates on Agricultural Resources and Environmental Indicators

Number 2 May 1996

1995 Nutrient Use and Practices on Major Field Crops

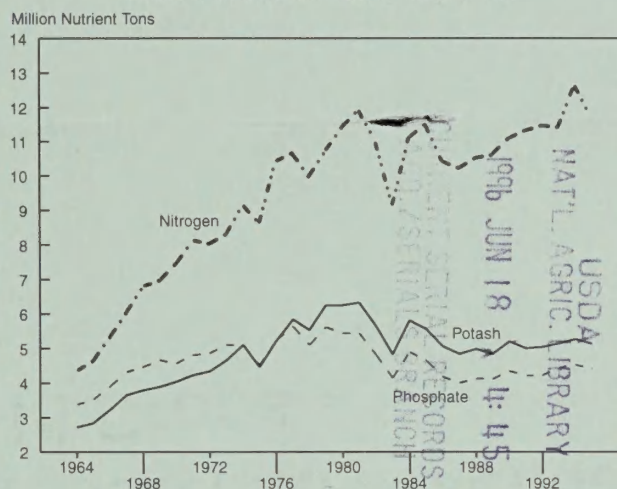
- Total nutrient use was 5 percent lower in 1995 than in 1994 with nitrogen use down 7 percent and phosphate and potash use down about 2 percent each. The major factor was decreased corn acreage, which uses 40 to 45 percent of all fertilizer.
- Nitrogen use per acre averaged higher on fall potatoes, corn, cotton, and wheat, but lower on soybeans.
- Spring before planting was the most common time to apply fertilizer to corn and soybeans; at planting for durum and spring wheat; after planting for upland cotton and fall potatoes; and fall before planting for winter wheat.

Both total fertilizer use data from the Association of American Plant Food Control Officials and USDA Cropping Practices Survey (see box) indicate decreased fertilizer use in 1995 over year-earlier levels. The USDA Cropping Practices Survey covers the 10 major corn, 14 soybean, 6 upland cotton, 4 spring wheat, 13 winter wheat, and 11 fall potato States.

Fertilizer use in 1995 on corn, the most fertilized crop, was as follows: Nitrogen—97 percent of planted acres fertilized (same as 1994), averaging 129 pounds per acre, same as 1994; Phosphate—80 percent of planted acres fertilized (down 3 percent), averaging 56 pounds per acre, down 1 pound from 1994; Potash—71 percent of acres fertilized (70 percent in 1994), averaging 81 pounds per acre, up 1 pound.

Fertilizer use on 1995 wheat, the second most fertilized crop, was as follows: Nitrogen—87 percent of planted acres fertilized (same as 1994), averaging 64 pounds per acre, down 3 pounds from 1994; Phosphate—62 percent of acres fertilized (59 percent in 1994), averaging 33 pounds per acre, down 2 pounds from 1994; Potash—18 percent of acres fertilized (up 1 percent from 1994), averaging 38 pounds per acre, same as 1994. Of the 24 percent

U.S. Fertilizer Use 1964-95



of acres tested for N, producers applied recommended amounts on 92 percent. Livestock manure was applied on 14 percent of corn and on 5 percent of soybean acres in the major growing States, down from 16 and 8 percent in 1994. Ground broadcast continued to be the principal method of fertilizer application on the major crops, followed by banding and injection. Chemigation was used on about 50 percent of the potato area, up from 45 percent in 1994. Soil, plant, or tissue testing for fertilizer needs in the major growing States ranged down from 82 percent of potato acres to 22 percent of wheat acres.

This Update presents only aggregate data by crop for 1995. To obtain 1995 data for individual surveyed States, see box "State Level Data." For 1994 data, see "AREI UPDATES: Nutrient Use and Management," 1995 Number 2.

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About AREI UPDATES

AREI UPDATES is a periodic series that supplements and updates information in **Agricultural Resources and Environmental Indicators (AREI)**, USDA, ERS, AH-705, Dec. 1994. UPDATES report recent data from surveys of farm operators and others knowledgeable about changing agricultural resource use and conditions, with only minimal interpretation or analysis. Please contact the individual listed at the end of the text for additional information about the data in this UPDATE. If you would like to be added to the mailing list or have other questions about AREI UPDATES or AREI, contact Richard Magleby, (202) 219-0436. [rmagleby@econ.ag.gov]

Table 1—Commercial nutrient use by State for years ending June 30¹

State/ region	1994			1995		
	Nitrogen	Phosphate	Potash	Nitrogen	Phosphate	Potash
	1,000 nutrient tons					
Maine	12	11	10	7	6	6
New Hampshire	3	1	2	3	1	3
Vermont	6	4	6	5	3	5
Massachusetts	14	7	9	14	7	11
Rhode Island	2	1	1	2	1	1
Connecticut	7	3	4	8	3	6
New York	116	77	104	100	65	85
New Jersey	33	21	25	24	13	17
Pennsylvania	103	66	76	92	63	78
Delaware	20	7	14	21	7	16
Maryland	60	35	48	73	33	53
NORTHEAST	376	232	299	349	203	280
Michigan	280	116	235	265	109	220
Wisconsin	216	113	263	211	111	258
Minnesota	691	236	282	632	241	282
LAKE STATES	1,186	465	781	1,108	461	760
Ohio	498	244	426	591	199	322
Indiana	582	213	390	498	227	397
Illinois	1,027	393	636	884	364	604
Iowa	1,036	294	442	883	305	440
Missouri	419	173	238	372	161	233
CORN BELT	3,562	1,317	2,133	3,228	1,257	1,996
North Dakota	528	194	31	577	178	29
South Dakota	208	98	16	172	99	20
Nebraska	900	184	36	719	163	31
Kansas	683	173	40	666	177	44
NORTHERN PLAINS	2,319	649	123	2,133	617	124
Virginia	101	67	93	97	66	92
West Virginia	9	10	9	8	7	7
North Carolina	228	114	197	223	110	199
Kentucky	214	119	146	199	113	140
Tennessee	167	103	131	167	103	137
APPALACHIA	720	412	576	694	399	574
South Carolina	87	39	75	85	36	73
Georgia ²	228	122	171	224	138	94
Florida	236	95	227	227	88	226
Alabama	150	41	63	104	50	70
SOUTHEAST	701	297	535	640	313	563
Mississippi	172	64	104	168	71	127
Arkansas	303	79	120	290	80	131
Louisiana	188	50	78	173	47	77
DELTA STATES	663	192	302	630	197	336
Oklahoma	337	91	32	321	86	32
Texas	1,040	273	159	887	255	136
SOUTHERN PLAINS	1,377	363	191	1,208	341	168
Montana	129	65	14	143	66	15
Idaho	202	84	22	203	95	27
Wyoming	103	27	2	105	28	2
Colorado	176	55	17	159	51	17
New Mexico	42	18	6	37	15	11
Arizona	90	30	1	83	26	0
Utah	27	15	4	28	15	4
Nevada	6	3	1	7	5	1
MOUNTAIN	775	298	68	765	300	79
Washington	225	61	45	223	57	49
Oregon	157	45	31	150	48	37
California	549	179	162	560	214	132
PACIFIC	932	285	238	933	319	218
48 States and D.C.	12,613	4,511	5,246	11,688	4,406	5,099
Alaska	3	0	0	3	1	0
Hawaii	18	6	14	17	6	13
Puerto Rico	9	3	8	11	4	10
U.S. TOTAL	12,643	4,521	5,268	11,720	4,417	5,123

¹Totals may not add due to rounding. ²Data is estimated.

Source: 1994 data are from Tennessee Valley Authority, Environmental Research Center, Commercial Fertilizer 1994. 1995 data are from The Association of American Plant Food Control Officials, Commercial Fertilizer 1995.

Table 2—Nutrient use and practices on selected crops for major producing States, 1995

Practice	Corn	Cotton	Fall		Soybeans		Durum wheat	Spring wheat	Winter wheat	All wheat
			potatoes	North	South	Both				
-----Thousand acres-----										
Planted acres	55,850	11,650	1,147	41,700	10,140	51,840	2,950	15,750	34,265	52,965
-----Percent of planted acres ¹ -----										
Livestock manure applied	14	3	2	5	2	5	3	2	3	2
Commercial fertilizers ap.	98	87	100	27	36	28	92	88	86	87
Nitrogen	97	87	99	16	21	17	92	87	86	87
Phosphate	81	56	98	19	31	22	78	78	54	63
Potash	72	40	89	23	33	25	10	23	16	18
Both chemical and manure ap.	13	3	2	1	@	1	3	2	1	1
Nitrogen inhibitor used	10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soil, plant, or tissue tested	34	27	83	NR	25	25	27	28	22	24
Tested for N ²	54	95	94	NR	41	41	94	93	91	92
Applied recommended N ³	78	73	73	NR	74	74	66	69	63	66
Applied > recommended ³	7	14	10	NR	7	7	4	10	15	13
Applied < recommended ³	14	13	17	NR	19	19	21	21	21	21
-----Percent of treated acres-----										
Fertilizer timing:										
Fall before planting	37	35	33	43	42	43	41	28	78	61
Spring before planting	56	47	46	43	48	44	51	39	NR	15
At planting	43	7	47	14	10	13	69	24	25	42
After planting	29	53	73	6	5	6	1	2	47	31
Nitrogen timing:										
Fall before planting	30	32	28	33	40	35	40	28	77	60
Spring before planting	52	43	40	42	43	42	51	39	NR	15
At planting	42	7	46	21	15	19	67	72	23	40
After planting	29	52	73	9	7	8	1	2	47	31
Phosphate timing:										
Fall before planting	26	37	27	40	42	41	7	4	57	34
Spring before planting	31	47	37	40	45	42	13	18	NR	8
At planting	48	4	46	18	11	16	80	80	38	56
After planting	2	17	30	2	2	2	NR	1	7	4
Potash timing:										
Fall before planting	34	34	29	45	44	44	NR	7	73	45
Spring before planting	38	49	41	43	44	43	58	29	NR	3
At planting	34	2	39	12	11	12	42	69	20	40
After planting	2	21	25	2	2	2	NR	NR	11	6
Fertilizer appl. method:										
Broadcast (ground)	73	55	79	85	95	88	18	38	62	52
Broadcast (air)	1	3	7	1	1	1	5	1	3	3
Chemigation	1	6	48	@	NR	@	1	@	1	1
Banded	40	29	47	13	3	11	76	71	21	39
Foliar	NR	1	@	NR	NR	NR	NR	NR	NR	NR
Injected (knifed in)	51	40	14	4	1	3	66	35	46	44
-----Number-----										
Average treatments per treated acre	1.8	1.7	3.6	1.1	1.1	1.1	1.5	1.4	1.6	1.5
Fields in survey	2,014	1,066	1,353	996	1,073	2,069	117	308	1,923	2,348
-----Pounds per treated acre-----										
Average application rates										
Nitrogen:										
Annual	129	95	221	27	37	29	65	59	67	65
Fall before planting	99	62	102	31	33	31	68	71	52	56
Spring before planting	109	53	104	29	37	31	55	65	NR	63
At planting	27	51	75	16	19	16	14	18	19	18
After planting	106	94	157	19	63	29	33	22	47	47
Phosphate:										
Annual	56	43	171	55	51	54	24	29	37	33
Fall before planting	71	40	147	60	55	59	24	40	43	43
Spring before planting	59	42	120	60	48	57	23	36	NR	34
At planting	40	40	115	35	42	36	24	26	28	27
After planting	35	38	108	20	39	25	NR	24	33	33
Potash:										
Annual	81	51	170	91	68	85	15	20	52	38
Fall before planting	102	56	172	101	74	94	NR	33	59	58
Spring before planting	85	48	131	91	60	83	18	26	NR	25
At planting	38	40	115	47	74	53	12	15	25	18
After planting	40	34	87	28	67	36	NR	NR	33	33

@ = less than 0.5 percent. Seasonal information will be less reliable than annual. NR = None reported. NA = Not applicable.

¹Percents in any column for a practice may add to over 100 since an acre can be treated more than once. ²Percent of soil tested acres tested for nitrogen. ³Percent of nitrogen tested acres.

Table 3—Commercial fertilizer application rates by how applied, major crops and producing States, 1995

Table 3—Commercial fertilizer application rates by how applied, major crops and producing States, 1993										
Application method	Corn	Cotton	Fall	Soybeans			Durum wheat	Spring wheat	Winter wheat	All wheat
			potatoes	North	South	Both				
Pounds per treated acre										
Nitrogen:										
Broadcast (ground)	85	55	125	22	37	26	64	58	56	56
Broadcast (air)	100	43	81	64	NR	64	26	79	29	36
Chemigation	72	84	146	2	NR	2	33	35	97	83
Banded	26	76	85	13	14	13	11	17	18	17
Foliar	NR	45	5	NR	NR	NR	NR	NR	NR	NR
Injected (knifed in)	125	101	112	97	57	93	67	69	60	63
Phosphate:										
Broadcast (ground)	64	41	139	59	51	57	28	35	44	42
Broadcast (air)	61	40	98	44	45	44	20	42	25	30
Chemigation	31	41	115	NR	NR	NR	NR	NR	2	2
Banded	40	41	114	35	33	35	24	26	27	26
Foliar	NR	14	6	NR	NR	NR	NR	NR	NR	NR
Injected (knifed in)	37	52	138	71	37	65	24	24	24	24
Potash:										
Broadcast (ground)	92	61	156	97	68	89	50	27	59	52
Broadcast (air)	106	30	83	96	60	86	NR	NR	7	7
Chemigation	62	11	87	@	NR	@	NR	NR	NR	NR
Banded	53	29	116	38	76	42	12	14	20	15
Foliar	NR	3	3	NR	NR	NR	NR	NR	NR	NR
Injected (knifed in)	42	27	65	NR	NR	NR	NR	22	7	12

@ = Less than 0.5 pound. NR = None reported.

Source: Cropping Practices Survey, USDA.

Cropping Practices Survey

The 1995 surveys included corn, cotton, soybeans, wheat, and potatoes and represented about 173 million acres in major producing States, which account for about 76 percent of the total U.S. acreage for these crops:

Corn: IL, IN, IA, MI, MN, MO, NE, OH, SD, and WI
 Soybeans: North = IL, IN, IA, MN, MO, NE, and OH. South = AR, GA, KY, LA, MS, NC, and TN.
 Cotton: AR, AK, CA, LA, MS, and TX
 Winter wheat: CO, ID, IL, KS, MO, MT, NE, OH, OK, OR, SD, TX, and WA
 Spring wheat: MN, MT, ND, and SD
 Durum wheat: ND
 Fall potatoes: CO, ID, ME, MI, MN, NY, ND, OR, PA, WA, and WI

State Level Data

Nutrient use and practice data for 1995 by crop for the individual surveyed States (see box on Cropping Practices Survey for listing of the States) may be obtained through ERS AutoFAX:

1. You must call from a telephone attached to a fax machine. Place a call to **202-219-1107**, using the handset attached to your fax.
2. When you get a voice prompt wait for menu options, then, **press 4**. When prompted for the document number, **enter 20203**.
3. When asked for a yes or no response, press **1 for yes** and **2 for no** on the telephone keypad.

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